

REMARKS

By this amendment, claims 1, 6 and 17 have been amended. Claims 1-21 are currently pending in the application, of which claims 1, 6 and 17 are independent claims.

In view of the above amendments and the following Remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Drawing Objection

In the Office Action, the drawings were objected to because they were not designated by a legend such as --Prior Art--. In this response, Fig. 1a, 1b, 2, 3, 4, 5a and 5b have been amended to include the legend --Prior Art--, as suggested by the Examiner. Thus, withdrawal of the objection is respectfully requested.

Also, the drawings were objected to for failing to show every feature of the invention specified in claims 11 and 12. This objection is respectfully traversed.

With respect to claim 11, Fig. 10 shows a connection member C formed between the gate lines Gn and Gn'. The gate line Gn' is adjacent to the gate line Gn, and the connecting member C is coupled between the gate lines Gn and Gn'.

With respect to claim 12, Fig. 10 shows the connection member C located between the blue (B) pixel with (+) polarity and the red (R) pixel with (-) polarity that belong to the different pixel groups, respectively.

It is submitted that Fig. 10 shows every feature of the invention specified in claims 11 and 12. Thus, withdrawal of the objection is respectfully requested.

Rejection Under 35 U.S.C. § 112, first paragraph

Claims 1-21 stand rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Particularly, the Examiner asserted that the original specification does not provide support for “a first distance between a first data line for a first pixel electrode of a first pixel group and a second pixel electrode of a second pixel group adjacent to the first pixel electrode is greater than a second distance between a second data line for the second pixel electrode and a third pixel electrode of the second pixel group adjoining the second data line” recited in claims 1, 6 and 17. Applicant respectfully traverses this rejection for at least the following reasons.

The specification describes “In the drawing, a sufficient distance d_2 is provided between a blue (B) pixel electrode and a data line D4 provided to the right (in the drawing) of the same pixel electrode, while *a distance d_1 between data lines D1, D2 and D3 and red (R), green (G) and blue (B) pixel electrodes is maintained to as small degree as possible*” (Page 12, lines 15-18).

It should be clear from the specification that the distance d_1 is *not limited* to the distance between the data line D1 and the red (R) pixel electrode. The distance between the data line D3 and the green (G) pixel electrode is also referred to as the distance d_1 , which is maintained as small degree as possible while a sufficient distance (d_2) is provided between the data line D4 and blue (B) pixel electrode.

Thus, it is submitted that the aforementioned claimed feature is supported by the specification. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 112, first paragraph rejection of claims 1-21.

Rejection under 35 U.S.C. §112, Second Paragraph

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph as being indefinite. Particularly, the Examiner asserted that the claimed limitation “a first distance between a first data line for a first pixel electrode of a first pixel group and a second pixel electrode of a second pixel group adjacent to the first pixel electrode is greater than a second distance between a second data line for the second pixel electrode and a third pixel electrode of the second pixel group adjoining the second data line” is unclear and confusing. This assertion is respectfully traversed.

In this response, independent claims 1, 6 and 17 have been amended for clarification. For example, amended claim 1 recites “a first distance between a first data line for a first pixel electrode of a first pixel group and a second pixel electrode of a second pixel group *neighboring the first data line* is greater than a second distance between a second data line for the second pixel electrode and a third pixel electrode of the second pixel group *neighboring the second data line*”.

To help the Examiner understand this claimed feature, the aforementioned claimed feature can be read on (although not limited to) Fig. 10 of the present application as follows:

--a first distance (d2) between a first data line (D4) for a first pixel electrode (**red (R) pixel electrode with (-) polarity**) of a first pixel group (**comprising the red (R) pixel electrode with other pixel electrodes (not shown) with (-) polarity**) and a second pixel electrode (**blue (B) pixel electrode with (+) polarity**) of a second pixel group (**comprising red (R), green (G) and blue (B) electrodes with (+) polarity**) neighboring the first data line (D4) is greater than a second distance (d1) between a second data line (D3) for the second pixel electrode (**the blue (B) pixel electrode with (+) polarity**) and a third pixel electrode (**green (G) pixel electrode with (+) polarity**) of the second pixel group (**comprising red (R), green (G) and blue (B) electrodes with (+) polarity**) neighboring the second data line (D3)--

The Examiner questioned “how can a second pixel electrode of the second pixel group be adjacent to the first pixel electrode of the first group?” (Office Action, page 4). As previously mentioned, claim 1 has been amended to read “a first distance between a first data line for a first pixel electrode of a first pixel group and a second pixel electrode of a second pixel group *neighboring the first data line*”. Fig. 10 shows the blue (B) pixel electrode with (+) polarity neighboring the data line D4 for the red (R) pixel electrode with (-) polarity, wherein the blue (B) pixel electrode and the red (R) pixel electrode belong to the different pixel groups and having different polarities, respectively.

The Examiner also questioned “It is also unclear how the second pixel electrode and a third pixel electrode adjoin the second data line” (Office Action, page 4). In this regard, Fig. 10 shows the blue (B) pixel electrode with (+) polarity adjoining the data line D3 (which is the data line for the blue (B) pixel electrode), and the green (G) pixel electrode with (+) polarity also adjoining the data line D3 because the data line D3 is arranged between the blue (B) pixel electrode and the green (G) pixel electrode.

The Examiner further questioned “... is “a second data line for the second pixel electrode” in the first pixel group or in the second pixel group”? It is submitted that claim 1 clearly recites that the second pixel electrode belongs to the second pixel group and the second data line is for the second pixel electrode.

As such, amended independent claims 1, 6 and 17 particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 112, second paragraph rejection of claims 1-21.

Rejections Under 35 U.S.C. § 103

Claims 1, 4-6, 9, 10, 13, 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U. S. Patent No. 5,790,092 issued to Moriyama, *et al.* (“Moriyama”). Applicant respectfully traverses this rejection for at least the following reasons.

In the Office Action, the Examiner admitted that “Moriyama does not disclose a first distance and a second distance as claimed” (Office Action, page 5). Nevertheless, the Examiner asserted “However, it would have been obvious to one having ordinary skilled in the art at the time of the invention was made to modify the device of Moriyama to have a first distance and a second distance as claimed since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art” (Office Action, pages 5-6). This assertion is respectfully traversed.

First, the Examiner’s rejection is based on incorrect application of case law. Based on *In re Boesch*, the Examiner asserted that the claimed relationship between the first distance and the second distance is discovering an optimum value of a result-effective variable, which involves only routine skill in the art. This assertion is respectfully disagreed with.

Neither the claims of this application nor the cited reference include ranges (e.g., temperature, concentration, etc.). Since there is no range disclosed in the prior art, there is no parameter which can be recognized as a result-effective variable. Since there is no result-effective variable, it is not possible to determine whether the optimum or workable range of the variable might be characterized as routine experimentation (See MPEP 2144.05). Thus, it is submitted that the Examiner applied case law incorrectly.

Second, as guided in MPEP 2142, “To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure”. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In this regard, it is submitted that the Examiner failed to establish a prima facie case of obviousness because the Examiner failed to prove (a) there is some suggestion or motivation, either in Moriyama or in the knowledge generally available to one of ordinary skill in the art, to modify Moriyama to have the claimed relationship between the first distance and the second distance, (b) there is a reasonable expectation of success and (c) Moriyama teaches or suggests all the claim limitations including the claimed relationship between the first distance and the second distance. Thus, it is submitted that the Examiner has not established a prima facie case of obviousness.

For these reasons, it is submitted that claims 1, 4-6, 9, 10, 13, 17 and 18 are patentable over Moriyama. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claims 1, 4-6, 9, 10, 13, 17 and 18.

Claims 2, 3, 7 and 8 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Moriyama in view of U. S. Patent No. 5,748,268 issued to Kalmanash, *et al.* (“Kalmanash”). Applicant respectfully traverses this rejection for at least the following reasons.

Claims 2, 3, 7 and 8 are dependent from independent claims 1 or 6. As previously mentioned, claims 1 and 6 are patentable over Moriyama because, for example, Moriyama fails to disclose or suggest “a first distance between a first data line for a first pixel electrode of a first pixel group and a second pixel electrode of a second pixel group *neighboring the first data line* is greater than a second distance between a second data line for the second pixel electrode and a third pixel electrode of the second pixel group *neighboring the second data line*”.

Kalmanash discloses “In a color display, the pixels are generally grouped in units of three or four ...”. However, Kalmanash does not disclose or suggest the above claimed feature. Since Moriyama and Kalmanash do not disclose or suggest this claimed feature, it is submitted that claims 1 and 6 are patentable over them. Claims 2, 3, 7 and 8 are dependent from claims 1 or 6 and would be also patentable at least for the same reason.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claims 2, 3, 7 and 8.

Claims 16 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Moriyama in view of U.S. Patent No. 4,986,637 issued to Yamaguchi (“Yamaguchi”). Applicant respectfully traverses this rejection for at least the following reasons.

Claim 16 is dependent from claim 1. As previously mentioned, claim 1 is patentable over Moriyama because, for example, Moriyama fails to disclose or suggest “a first distance between a first data line for a first pixel electrode of a first pixel group and a second pixel electrode of a second pixel group *neighboring the first data line* is greater than a second distance between a second data line for the second pixel electrode and a third pixel electrode of the second pixel group *neighboring the second data line*”.

Yamaguchi shows, in Fig. 9, a column of red pixels 102, a column of green pixels 104 and a column of blue pixels 106. However, Yamaguchi does not disclose or suggest the above claimed feature. Since Moriyama and Yamaguchi do not disclose or suggest this claimed feature, it is submitted that claim 1 is patentable over them. Claim 16 is dependent from claim 1 and would be also patentable at least for the same reason.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claim 16.

Claims 11, 12 and 19-21 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Moriyama in view of U.S. Patent No. 5,847,687 issued to Hirakata (“Hirakata”). Applicant respectfully traverses this rejection for at least the following reasons.

Claims 11, 12 and 19-21 are dependent from independent claim 6 or claim 17. As previously mentioned, claims 6 and 17 are patentable over Moriyama because, for example, Moriyama fails to disclose or suggest “a first distance between a first data line for a first pixel electrode of a first pixel group and a second pixel electrode of a second pixel group *neighboring the first data line* is greater than a second distance between a second data line for the second pixel electrode and a third pixel electrode of the second pixel group *neighboring the second data line*”.

Fig. 5 of Hirakata shows the common line 13. However, Hirakata does not disclose or suggest the above claimed feature. Since Moriyama and Hirakata do not disclose or suggest this claimed feature, it is submitted that claims 6 and 17 are patentable over them. Claims 11, 12 and 19-21 are dependent from claims 1 or 17 and would be also patentable at least for the same reason.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejection of claims 11, 12 and 19-21.

CONCLUSION

Applicant believes that a full and complete response has been made to the pending Office Action and respectfully submits that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, Applicant respectfully submits that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicant's undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

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ATTACHMENT: REPLACEMENT DRAWINGS FOR FIGS. 1A, 1B, 2, 3, 4, 5A AND 5B

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AMENDMENTS TO THE DRAWINGS

Attached hereto are replacement figure sheets for Figures 1a, 1b, 2, 3, 4, 5a and 5b, which include the changes, without markings, identified below.

Figure 1a, 1b, 2, 3, 4, 5a and 5b have been amended to include the legend --Prior Art--.